

*Leek*  
District



*Urban  
Council.*



## *JOINT REPORT*

OF THE

Medical Officer of Health

AND

Sanitary Inspector

ON THE

*Sanitary Condition of Leek,*

For the Year ending 1904.



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TO THE LEEK URBAN DISTRICT COUNCIL.

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MR. CHAIRMAN AND GENTLEMEN,

In submitting my report for the year 1904, I must again point out that as these reports are framed according to the requirements of the Local Government Board and County Council, there is necessarily a large amount of repetition of previous reports, as a statement of the local circumstances and a history of local sanitary questions, which may seem superfluous to you, may frequently be of the utmost importance to them.

GENERAL LOCAL FEATURES.

The Leek Urban Sanitary District covers an area of 1460 acres, and in the highest portion of what is a hilly district, attains an elevation of about 600 feet above sea level; the natural drainage is into the river Churnet.

A line drawn across the middle of the district, due north and south, marks fairly accurately its geological division; on the east of this line is a sub-soil of clay, on the west one consisting of red sandstone.

Investigations have been made with the view of ascertaining what influence this difference of sub-soil has on the health of the inhabitants, both in respect to the

general mortality, and more particularly as to its influence on the mortality from Phthisis, with the somewhat unexpected result that no appreciable difference could be demonstrated.

Further comparative investigations relating to other diseases would be interesting and instructive.

The population is mainly composed of artisans, the chief trade being silk manufacture and silk dyeing.

#### HOUSE ACCOMMODATION.

The house accommodation is fairly good, both as regards its adequacy, and fitness for habitation. Seven cases of overcrowding have been investigated and reported on, and after notices had been served, the condition was brought within legal limits, prosecution being rendered unnecessary.

I fear there are many cases best described as borderland cases, which I should heartily rejoice to get rid of, but the dearth of houses having good-sized rooms at a low rent makes it impossible, for wages are always comparatively low in many branches of silk manufacture, and especially low now that the trade is bad and many workers are making short time.

The injurious effects in these borderland cases would be largely counteracted if the people would learn to open the windows more freely and to unstopp the chimneys which are stuffed with a bag of shavings, &c., or blocked by boards and frequently papered over to look clean and pretty. These conditions, which plainly mean want of fresh air and accumulation of bad air in the bedrooms, have an important bearing on our infant mortality, for

infants are most susceptible to the poisonous atmosphere, and either die in the early months, or surviving these grow up poor miserable wrecks, a burden to themselves and to the rest of the community.

A sufficiency of open space about the houses is much more apparent in the more recently erected buildings, and their surroundings are clean. There are only 14 back-to-back houses in the whole district, ten of these have two large bedrooms with good windows, and are provided with a separate water-closet each.

Supervision is constantly exercised over the erection of new houses.

#### SEWERAGE AND DRAINAGE.

Under this heading I am compelled to repeat from last year's report:—"It is again necessary to call your attention to some outlying portions of the district which require drainage improvement: the portions to which I refer are the west out-fall; also the district adjoining the Canal Wharf, which should be properly drained, and the sewage conveyed to the west side of the sewage farm."

#### SEWAGE DISPOSAL.

In my last report I briefly reviewed the history of our sewage difficulties and even dared to think we had now turned a page full of hope for the future.

The sanction of the Local Government Board to the new scheme is just to hand, and I am hopeful that before long this will be in operation and will give us that quality of effluent we have so long desired in vain.

### EXCREMENT DISPOSAL.

The system in vogue for the disposal of excrement is mainly the water-carriage system, the remaining privies being gradually replaced by wash-down closets, either hand-flushed or furnished with flushing apparatus. During the year 48 privies have been converted into water-closets.

### REMOVAL AND DISPOSAL OF HOUSE AND TRADE REFUSE.

The removal of house refuse is accomplished by the public scavengers employed by the Council, who make weekly rounds to collect the contents of about 2,000 movable receptacles; otherwise where ashpits exist these are emptied on notice being sent to the Authority. During the year 54 offensive ashpits have been abolished.

It is, in my opinion, necessary to provide suitable covers to the ashes carts.

The disposal of refuse consists simply in its being emptied on the "tip," and as in addition to ashes this refuse contains a mixture of decomposing animal and vegetable matter, the "tips" necessarily become a source of danger to the community. This is a matter which calls for the attention of the Council in the near future; "tipping" should be entirely abolished, and a "destructor" erected, in which these objectional matters could be cremated.

The want of a "destructor" is perhaps more keenly felt for the final disposal of "trade refuse" accumulating from butchers', fishmongers', provision dealers', green-grocers', fried fish and tripe shops; this is not collected with house refuse and leads to many cases of nuisance. Of all kinds of refuse this is surely the worst, and requires destruction by fire.

## WATER SUPPLY.

The water supply is one of which we are justly proud; taking its origin in a series of deep springs in the millstone grit of the Roches, which are all carefully covered in, it is carried directly, practically without storage to the town. The only approach to storage consists in the use of a reservoir situated on the outskirts of the town, which receives the surplus water during the night, this is reduced by the increased demand during the day, diminishing the pressure in the mains, and allowing a flow from the reservoir through an automatic valve. The supply is sufficient, wholesome, and free from risk of pollution.

There is no necessity for storage in cistern on the premises as the supply is on the "constant" system.

Lodging-houses, slaughter-houses, bake-houses, dairies, cowsheds, &c., are dealt with in detail in the Inspector's report.

## INFECTIOUS DISEASES AND ISOLATION HOSPITAL.

Infectious diseases are as far as possible dealt with at the Isolation Hospital; true isolation in the homes being well nigh an impossibility. In this connection I heartily endorse the remarks of the Inspector.

The question of hospital accommodation is still under the consideration of your committee, to whom I have pointed out the necessity of increased accommodation, and especially the desirability of providing small observation wards in which cases of a doubtful nature can be temporarily isolated until their exact diagnosis has been made; also the provision of a suitable discharging room, so that

patients may be bathed, clothed, and discharged without coming near the wards.

In view of the fact that during the year the total number of cases in hospital has only been 59 (no serious epidemic having occurred) it is somewhat difficult for me to urge the point of increased accommodation; this difficulty it will, however, be readily admitted is more apparent than real, and because we have not experienced during the year any serious epidemic, the chances are the more strongly in favour of its coming upon us at early date, for which contingency we should do well to be fully prepared. It must be borne in mind that a small isolation hospital requires a comparatively large and expensive staff in order to meet times of extraordinary stress, though it may be empty or nearly empty for months together; and it is manifestly unfair to compare the cost per patient per week with the cost per patient in a general hospital, where the per centage of beds occupied is constantly higher, and where totally different conditions obtain throughout.

I am pleased to be able to state that your Surveyor has now in hand plans for increased accommodation up to 18 beds, three of which will be isolated observation wards; in addition the plans show a discharging block comprising undressing room, bath, w.c., dressing room and waiting room for friends of the patients.

#### DISINFECTION.

Disinfection is effected by means of the dense fumes of vaporised carbolic acid, produced by a portable apparatus designed by Mr. Farrow, more than twenty years ago, and now made by Messrs. Calvert, of Manchester. This method has been constantly used in this district since that

time to the exclusion of all other methods: it is rapid, clean, efficient, is not injurious to furniture or metal work, and in no way affects the colours of pictures, wall-papers, or delicate fabrics; all great advantages over the sulphur method.

Half-a-pound of phenol can be converted into vapour in three minutes, and is sufficient for the disinfection of a room of the capacity of 1,000 cubic feet.

I have personally proved the efficacy of this vapour by extended bacteriological experiments, and beg to call the attention of the various Authorities of the County to this simple means of disinfection: the results obtained with mattresses, bedding, &c., were not, however, satisfactory, for these articles current steam should be used.

We have recently added to our equipment a "Thresh's Emergency Disinfector," which is kept at the Isolation Hospital; it is portable, and is available for use in the proximity of any house where required. We have also recently acquired a properly constructed hand-cart for the conveyance of infected bedding, etc., either to the "Disinfector" or to destruction by fire, unhappily I cannot use the word "Destructor" in its technical sense, but hope that in the near future this will be possible.

#### VITAL STATISTICS.

The deaths for the year numbered 302 which is 19 more than the average for the preceding 10 years and gives a mortality rate of 18·9 per 1,000, which when corrected by the deduction of 19 non-residents, and the addition of 6 residents who died beyond our boundaries, leaves an actual death-rate of 18·1 per 1,000 of the living.

The mean age at death of each deceased individual

was of all persons 37·5 years, of males 38·4 and of females 36·3 years.

The number of Births registered during the year was 422, 2 more than last year's return, and exactly the average for the preceding 10 years. These comprised 207 males and 215 females, giving a birth rate of 26·5 per 1,000 of the population. Eight still-births have been registered during the year.

A glance at the figures will show that after the corrections have been made our death rate has increased to 18·1 per 1,000. This increase is largely due to our infant mortality, which is a blot on our statistics, and to an increase in the number of deaths from phthisis; with these I have dealt more fully under their respective headings. It is frequently stated that considering our geographical situation, surrounded as we are by stretches of moorland and an abundance of pure air, there must be something radically wrong with our sanitary arrangements or we should have a much lower death rate.

This is a very complex question, influenced by many considerations, the principal of which appear to me as follows :—

1. *Climatic Conditions.* We have indeed a good, pure, bracing air; at the same time the temperature is frequently very low, and we have many spells of strong east wind, which together increase our respiratory death rate, especially in the case of the very young and the very old. We had an illustration of this in the returns for December, during which 32 deaths were registered, 12 of which were due to diseases of the respiratory organs. Thirteen of the deaths were in children under 2 years of age, and 7 were in persons over 65 years, although many of these

were not directly attributed to respiratory diseases, there is no doubt the extreme cold experienced lowered their vitality, and accelerated the final issue.

2. *Insanitary Conditions.* There is no doubt such do exist, many having been brought to light during the recent house to house inspection. Many of these sanitary defects are trivial and will always be discovered during periodic inspections, for property is constantly getting out of repair; some are of a more serious nature, such as the want of sufficient ventilation; in many instances windows that would not open have been made to open, and windows which were too small have been replaced by larger ones; again, no less than 48 privy middens have been abolished, and wherever these exist they cannot make for the health of the community.

3. *Economic Conditions.* A large proportion of the inhabitants are silk-workers, 4,000 at least being so employed. Their average wages are low as compared with wages paid in other industries, such as cotton, etc.; in fact so low that they will admit of no reduction, and when the staple trade is bad as has been the case all the year, and the hands are forced to work short time, the pinch is keenly felt: they strive to increase their income in various ways, which all tend in the direction of sanitary unrighteousness: -

(a) The mothers are compelled to work in the mills to the neglect of home and children.

(b) Lodgers are taken in and increase the tendency to overcrowding.

(c) Work is taken from the mills to the homes where it is executed at prices which defy competition.

In addition, rents have been raised owing to increasing rates, education rate, etc., so that a man on short time having a wife and small family to keep, cannot afford a better house, and cannot afford good food and good clothing for the little ones, who get a bad start in life from which many of them never recover, but help to swell the number of inefficients, who drearily muddle through "life" as ill-developed, chronic dyspeptics, who, unable to weather the storm, are cut off rather sooner than later. Such as these increase the death rate to an extent it is impossible to estimate.

Another point having a direct bearing on efficiency—and efficiency is truly a sanitary question—is bathing. Considering the nearly 16,000 inhabitants of the town, and the number of youths associated with the several swimming clubs, which, I am delighted to see, have during the last few years sprung into being, I think it is high time better provision was made as regards the size of swimming baths, the more frequent renewal of the water, which is often anything but clean, and the ventilation of the bath which needs attention.

I have referred elsewhere to the bathing habits of the Japanese, which may be looked upon as one of the factors having a bearing on the efficiency of this wonderful people.

#### AGES AT DEATH.

Under 1 year ...	...	...	71
Between 1 and 5 years...	...	...	29
,,    5  ,,  15  ,,	...	...	5
,,    15  ,,  25  ,,	...	...	14
,,    25  ,,  65  ,,	...	...	100
Over 65 years...	...	...	83

There was no uncertified death in the district during the year.

#### INFANT MORTALITY.

Last year I was able to report a diminished infant mortality, the figures being 133·3 as compared with 167 and 165·8 per 1,000 births during the years 1901 and 1902. It is a matter for regret that the improvement has not been maintained, the number for the year reaching the high figure of 168·2 per 1,000 births.

This increase is difficult to account for, certainly diarrhoea, measles and whooping cough have had some influence, but I am much afraid that other general conditions are of far greater import; these may be briefly stated as follows:—

1. Employment of mothers in the mills depriving their offspring of their natural food during the most important period of the first few months of life; as a consequence we have improper feeding from dirty feeding bottles and general neglect as evidenced by the dirty condition of the clothing and also of the bodies of infants. A recent traveller has shown that the infant mortality of Japan is lower than it is in Europe or America; this is especially attributed to cleanliness, for in such places at least as Tokio, everyone bathes and has a good scrubbing every day. From 800,000 to 1,000,000 persons go to the public baths of the capital daily, and that in a town with a population of less than 2,000,000. The extreme cleanliness of the Japs has a great deal to do with keeping the death-rate among children so low.

2. Insurance of infant lives, which is extensively carried on in the town; no less than 71·8 per cent. of

the total number of infant deaths during the year having been insured in one single society in the town! Comment unnecessary.

I venture to repeat the suggestion made in last year's report that instruction should be given to the elder girls in the elementary schools (for these are the mothers of the future) in matters relating to healthy conditions in the home, and in the feeding and care of infants.

#### MORTALITY AT AGE 1 TO 5, ESPECIALLY THE 3 TO 5 AGE PERIOD.

Not only has the "infant mortality" increased, but the number of children dying between the ages of 1 and 5 has increased from 21 last year to 29 this year. I think this may be attributed principally to the number of deaths at these ages due to measles and whooping cough.

It is, in my opinion, a mistake to send children under 5 years of age to school. From 3 to 5 years is not only the period of greatest frequency of these diseases, but is also the most fatal period. At this age therefore children should not congregate at school; the law does not compel attendance, but grant is paid on the attendance, which naturally the school authorities do their best to keep up: mothers also make it convenient to get rid of the children for part of the day. Briefly, the result is an increase of "preventable" deaths; a lowered physical and mental condition of the children, and an expenditure of about a million of money a year (on this age period) out of the pockets of the taxpayers.

Facts such as these should influence even such a body as the Board of Education.

## CAUSES OF DEATH.

*Zymotic Class.*

The Zymotic class of diseases is responsible for 28 deaths, the average for the previous ten years being 29; of these 7 were attributed to diarrhoea, 3 to small-pox, 2 each to epidemic influenza and enteric fever, 7 to measles, 1 to membranous croup, and 6 to whooping cough.

In all cases of infectious disease the premises have been promptly inspected, and most careful investigation made to discover the source of infection, sanitary defects discovered being remedied forthwith.

The milk supply was free from suspicion in every instance.

Thirty-nine cases of scarlet fever, 22 cases of diphtheria, 3 cases of croup, 5 cases of erysipelas, 10 cases of enteric fever, 118 cases of measles and 44 cases of small-pox were notified during the year, of which 34 scarlet fever, 12 diphtheria, 1 membranous croup, and 7 enteric fever were removed to the Isolation Hospital, the 44 cases of small-pox were removed to the Bagnall Hospital, giving a total of 99 removals to hospital out of 123 cases notified, or 80·4 per cent. (measles not included).

The voluntary notification of the first case of measles in any house adopted last year has certainly been of benefit, having given early indication of the locality of the disease, and enabling measures to be taken to exclude from school all the children from infected houses: the notification has also an educational influence for it impresses the public with the gravity of the disease, which impression is emphasized by serving an infectious disease notice on the parent.

*Phthisis.*

Phthisis has been responsible for 35 deaths, the average for the preceding 10 years being 24·2.

I am sorry to have to report such an increase in the phthisis mortality, which in my opinion, is more apparent than real, many cases nowadays being certified as phthisis which formerly came under the different headings of other respiratory diseases, this however, does not account for the whole increase. Phthisis is now generally considered to be a dirt or filth disease, and I feel sure that if habits of cleanliness were more frequently practised, together with the admission of plenty of fresh air, especially through the open bedroom window during hours of sleep, the number of cases of this terrible disease would rapidly diminish.

The "open air" treatment is simply "ventilation" treatment, and it is far easier to prevent than to cure, therefore I urge free ventilation of all rooms, and especially of bedrooms in which such a large proportion of our time is spent.

During my house to house visitation in some of the worst streets of the town, I was very much struck with the dirty condition of some of the houses, especially of the bed rooms, not only as to floors, walls, furniture and clothing, but more particularly as to the atmosphere of the room, which in some cases was sickening. These rooms had been slept in during the night, the windows had probably not been opened for weeks, and the marvel to me is that infectious disease is not more frequently in evidence. The cleaning down, lime washing, etc., enforced during the small-pox scare, must have sweetened some of the sour places, but it takes much teaching to

drive home the simple lesson that a window is made to open. If free ventilation and cleanliness were more generally practised, we should have fewer and fewer cases of phthisis, and less money would be required from the rates to build and keep up Sanatoria for the treatment of consumptives. If preventive measures are ignored, Sanatoria are bound to be required, and it seems to me such a foolish policy and waste of money to begin at the wrong end of the business.

The phthisis notification post cards from the Registrar to the Sanitary Inspector have been of great service in supplying early information, enabling disinfection to be carried out in every case without delay. I am glad to add that no opposition to this procedure is encountered.

### *Diphtheria.*

Diphtheria and membranous croup have only been responsible for one death out of a total of 25 cases notified. This tends to indicate the generally mild character of the cases, in fact our estimate of diphtheria needs considerably modifying, for since the adoption of the bacteriological diagnosis much of our previous clinical experience has needed revision. All this means the notification of many mild cases which previously escaped recognition : undoubtedly these very mild cases are of the utmost importance, constituting as they do a great danger to the community, for a child may contract severe diphtheria from a very mild case. Hitherto a certain amount of laxity has prevailed concerning these mild cases, the sore throat has soon been well and apparently clean, and unfortunately patients have been allowed to mix with other children ; in this way I feel convinced we may account for many cases, personal contact in school or at

play being a far more important factor in spreading the disease than are so called sanitary defects in the houses. To meet this difficulty your committee passed a resolution declining to disinfect clothing or premises until a negative report had been received from the Birmingham Authority.

I have every reason to believe the results of this resolution are and will be of immense benefit.

In view of the increased number of swabs required to be sent by the medical practitioner, and also of the need for compulsory registration of these at the Post Office, your committee wisely decided to refund the cost of postage, which may be looked upon as a good sanitary investment.

#### *Local Diseases.*

In the class of local diseases the mortality from diseases of the brain and nervous system was 38, the average for 10 years being 34·7; that from heart affections 35, the 10 years' average being 32·7; that from diseases of the digestive organs 30, the average for 10 years being 24·5; that from diseases of the respiratory organs 42, the 10 years' average being 46·5 and that from malignant disease 8, the 10 years average being 12.

As these diseases are chiefly the result of mistaken and injurious habits of life, influenced very considerably by the economic conditions already alluded to, we do not find that improved sanitation has much influence over them, although in other classes this agency has been most effectual, as demonstrated by the fact that within the last 44 years the rate of mortality has been reduced 30 per cent., and the duration of life increased 30 per cent., as compared with the 10 years ending 1860.

There is nothing more in this year's mortality returns requiring special comment, and I append table giving principal causes of death in 1904:—

		Number of deaths.	Average of preceding 10 years.	Mortality per 1,000 of population.
Influenza	... ... ...	2	2.1	0.12
Measles	... ... ...	7	9.3	0.43
Diarrhoea	... ... ...	7	0.3	0.43
Diphtheria and Membranous Croup	... ... ...	1	1.1	0.06
Enteric Fever	... ...	2	2.5	0.12
Small-pox	... ... ...	3	0.2	0.18
Whooping Cough	... ...	6	4.2	0.36
Total zymotic diseases	...	28	29.0	1.76
Phthisis	... ... ...	35	24.2	2.19
Bronchitis, Pleurisy, and Pneumonia	... ...	37	46	2.32
Heart disease	...	35	32.7	2.19
Cancer...	... ... ...	7	11.9	0.43

#### THE SMALL-POX EPIDEMIC. MAY 28—JULY 13.

The total number of cases notified and sent to Bagnall Hospital was 44, of which two were suspicious cases other than small-pox, one a boy of four, living at a house where several railway workers lodged, proved to be chicken-pox; the other was a railway worker, who came

here ill from Waterhouses, he exhibited suspicious symptoms, had an ill-defined rash, and as we had no place in which to watch the case I sent him to Hospital for observation.

#### SOURCE OF INFECTION.

As no less than 25 cases were notified during the first four days of the epidemic, it is evident there was one common origin. The large majority of cases were railway workers (and members of their families), who frequented the Green Man Inn, Compton, which is situated in the midst of the infected area; three of the cases were inmates of the Green Man, and of the remainder the great majority had been in the habit of calling at the same public-house. All investigation to find the primary case proved fruitless, but one of the earliest cases, a railway man, told me (on returning from hospital) that a few weeks before he took ill an old comrade tramped from London and was too ill to work, but was loafing about for several days, he had some spots on his face, and frequently met his mates at the same public-house, evidently infecting them, the proprietor, and his two sons. He subsequently tramped away in search of work and could not be traced.

As the three cases at the Green Man were very modified, and the medical attendant did not feel warranted in notifying them, Dr. Phillips, who attends all patients at Bagnall, was called in, and pronounced them all cases of undoubted small-pox.

#### ACTION TAKEN BY THE SANITARY AUTHORITY.

Two special meetings were held May 30th and 31st, to consider what steps should be taken; a poster and

handbill were circulated, vaccination of contacts, thorough disinfection of clothing and premises and destruction of infected bedding were advised.

In order to induce contacts to be vaccinated, as unfortunately there is no power to compel this procedure, your committee ordered the sum of five shillings to be paid to each if vaccinated and inspected four times during the fortnight, one shilling to be paid at each of the first two and one and sixpence at each of the last two inspections.

The effect was decidedly good, for as previously persuasion and the offers of the public vaccinator had almost entirely failed, the payment of five shillings brought large numbers to the Sanitary Office where the public vaccinator was in attendance every evening. Altogether a total of 71 re-vaccinations was in this way accomplished.

In a very few instances where vaccination was still declined, contacts were kept in quarantine for 16 days, and necessaries found by the Council.

#### STAFF.

The Sanitary Staff had to be increased by the engagement of three men (two from the Surveyor's department) to assist the two Sanitary Inspectors.

The work was so overwhelming I was compelled to devote my whole time to it, and had to engage a temporary assistant whose expenses were paid by the Council.

I made a house to house inspection of all infected districts, seeking out any cases of suspicious illness, and urging re-vaccination on all inmates.

## METHOD ADOPTED.

Each case was promptly removed to the North Staff. Joint Small-pox Hospital, the house and clothing of contacts were thoroughly disinfected; beds and pillows were removed in a specially made zinc lined covered-in handcart to the sewage farm, where they were soaked with paraffin and burned.

## RESULTS.

With such an alarming start as 25 cases the first week-end, it was naturally expected we were in for a very big epidemic, and I think I am justified in saying this was averted by the prompt action taken by the sanitary officials, our Assistant Inspector, Mr. F. Green,<sup>NOW. INSPI</sup> working most indefatigably and willingly at all hours.

There were three deaths, two in the unvaccinated, and in the third vaccination was very doubtful, no marks on the arms being visible.

## LESSONS FROM THE EPIDEMIC.

The value of vaccination as a preventive (other conditions such as exposure to infection, insanitary surroundings, want of ventilation, being identical), is well illustrated by the following cases:—

Example 1.—A man suffering with small-pox was sent to hospital, the contacts were:—

Wife, vaccinated in infancy,

Daughter, 12, , ,

Son, 14, never vaccinated.

The wife absolutely refused vaccination for herself and both children, but the son being alarmed was vaccinated while his mother was upstairs, at which she was furious. After the lapse of a fortnight the daughter sickened and

was removed. The wife, being now alarmed, requested vaccination, which was done though too late to prevent an attack, as she developed in a day or two a very modified attack. The only contact in the house to escape being the boy, who was never vaccinated until his father's removal.

Example 2.—At the end of May a railway worker had small-pox and was removed to hospital; the contacts were :—

Brother, a railway worker, vaccinated in infancy.

Brother's wife, vaccinated in infancy.

4 children, ages 14 to 4 years all unvaccinated.

Baby, 2 years, vaccinated.

The parents would not be vaccinated or allow any of the family to be vaccinated. After a lapse of five days however, the man, finding he was not allowed to resume work, submitted to vaccination, which was too late to protect him, for in about a week more he sickened, as did also the wife and the four elder children, the only inmate to escape being the baby who had been vaccinated eighteen months previously. There being no one to take care of it, the little one was sent to hospital where she slept with her mother in the general ward and remained perfectly well; now why should this one child escape exposed as she was to the same poison and in the same surroundings as the others? The only possible answer is "she was protected by vaccination."

A few weeks later I saw the father at Bagnall and expressed to him the hope that his views as to the efficacy of vaccination had undergone modification. He assured me they had, and he added he was very sorry he had ever been so stupid, for he was afraid his mistake had very nearly cost him the lives of two of the children,

who were at that time lying extremely ill. I am glad to say they all eventually recovered.

Another point of some importance is our insecurity during the progress of the railway now under construction in our vicinity. The contractors will not agree to insist on re-vaccination of new men, and as many of these belong to the tramping fraternity, and as there are cases of small-pox in the county at the present time, our community is in constant danger from imported cases.

A further point of paramount importance lies in the extreme difficulty experienced in getting contacts vaccinated. If compulsion were ever requisite, surely fresh contacts should be compelled by the law to be re-vaccinated, unless the operation has been recently performed. If this were legalised the security of the community would be vastly increased, and the work of stamping out an epidemic would be infinitely diminished, consequently hospital accommodation would be to a less extent requisite, and the pockets of the ratepayer would not be so largely drawn upon.

#### FACTS CONCERNING SMALL-POX AND VACCINATION.

1.—The mortality from small-pox is much less now than in pre-vaccination times.

2.—The greatest diminution in the small-pox mortality is found in the early years of life, in which there is most vaccination.

3.—In countries where there is much vaccination and re-vaccination relatively to the population, there is little small-pox.

4.—In classes among which there is much vaccination and re-vaccination there is little small-pox.

5.—In places where small-pox prevails it attacks a much greater proportion of the unvaccinated than the vaccinated, especially where the vaccinations are comparatively recent.

6.—In houses invaded by small-pox in the course of an outbreak not nearly so many of the vaccinated inmates are attacked as of the unvaccinated in proportion to their numbers.

7.—The fatality rate among persons attacked by small-pox is much greater, age for age, among the unvaccinated than among the vaccinated.

8.—It cannot be truthfully alleged that independently of vaccination small-pox is a milder disease now than in former centuries.

9.—The degree of protection conferred by vaccination corresponds to the thoroughness with which the operation has been performed, three or four marks being better than one or two, and a large mark much better than a small one.

10.—Sanitation cannot account for the facts above set forth.

11.—Though isolation of small-pox cases in hospitals is a useful auxiliary to vaccination it is no substitute for it.

12.—Vaccination is very safe.

13.—Calf lymph is now available to Boards of Guardians for the vaccination of every child in the country.

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Details of the epidemic are here condensed in tabular form :—

TABLE GIVING PARTICULARS IN REFERENCE TO CASES OF SMALL-POX  
WITH A VIEW TO PREVENT THE SPREAD OF THE DISEASE.

Date of Notification and Number of Cases.	Age and Sex.	Date of Removal to Bagnall S. H.	Vaccin- ated or Un-Vac- cinated.	Date of Discharge or Death.	SOURCE OF INFECTION.
May 28 I.	M 36	May 28	P. Vac.	June 27	A Railway Worker (unknown) met his friends at "The Green Man Inn Compton
May 28 II.	M 29	May 28	P. Vac.	June 18	Ditto
May 28 III.	M 24	May 28	P. Vac.	June 28	Ditto
May 28 IV.	M 23	May 28	P. Vac.	July 9	Ditto
May 28 V.	M 38	May 28	P. Vac.	June 20	Ditto
May 28 VI.	M 50	May 28	Un-Vac.	Died June 7 at 5-30 p.m.	Ditto
May 28 VII.	F 38	May 28	D'btfull	Died June 8 at 4-15 a.m.	Ditto
May 28 VIII.	F 27	May 28	P. Vac.	June 18	Ditto
May 29 IX.	M 34	May 29	P. Vac.	June 20	Ditto
May 29 X.	M 30	May 29	P. Vac.	June 20	Ditto
May 29 XI.	M 30	May 29	P. Vac.	June 18	Ditto
May 29 XII.	F 19	May 29	P. Vac.	June 18	Ditto
May 30 XIII.	M 48	May 30	P. Vac.	July 19	Ditto
May 30 XIV.	M 33	May 30	P. Vac.	June 28	Ditto
May 30 XV.	M 31	May 30	P. Vac.	June 28	Ditto
May 30 XVI.	M 34	May 30	P. Vac.	June 20	Ditto
May 30 XVII.	M 30	May 30	P. Vac.	June 20	Ditto

JERRING DURING THE YEAR 1904, AND THE ACTION TAKEN THEREON

of Beds and other Infected Articles destroyed and replaced.	No. of Contacts kept in quarantine or under observation for 17 days.	No. of Contacts vaccinated or re-vaccinated.	No. of Contacts who developed the Disease.	Others who had seen patient, who were vaccinated.
flock bed, bolster, and two pillows. Premises thoroughly disinfected	7	0 All declined	6	
flock bed, bolster, and two pillows, Premises thoroughly disinfected	6	5 on June 2	1	
flock bed, bolster, and two pillows. Premises thoroughly disinfected	1	1		
flock bed, bolster, and two pillows, Premises thoroughly disinfected	5	...	2	
flock bed, bolster, and two pillows. Premises thoroughly disinfected	3	...	2	
flock bed, bolster, and two pillows. Premises thoroughly disinfected	5	1		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	2	2		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	1	1		
buttoned mattress bed, bolster and two pillows. Premises thoroughly disinfected	5	2		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	2	2	...	1
flock bed, bolster, and two pillows. Premises thoroughly disinfected	4	3		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	8	6		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	4	4		
flock bed, bolster, two pillows, two mats. Premises thoroughly disinfected	6	5		
flock bed, bolster, and two pillows. Premises thoroughly disinfected	5	4		
flock bed, bolster, two pillows, one couch bed. Premises thoroughly disinfected	3	3		
buttoned flock bed, bolster, and two pillows. Premises thoroughly disinfected	2	2		

TABLE GIVING PARTICULARS IN REFEREN

Date of Notification and Number of Cases.	Age and Sex.	Date of Removal to Bagnall S. H.	Vaccin- ated or Un-Vac- cinated.	Date of Discharge or Death.	SOURCE OF INFECTION.
May 30 XVIII.	M 32	May 30	P. Vac.	July 2	Ditto
May 30 XIX.	M 41	May 30	P. Vac.	June 20	Ditto
May 30 XX.	M 18	May 30	P. Vac.	June 20	Ditto
May 30 XXI.	M 19	May 30	P. Vac.	June 20	Ditto
May 30 XXII.	M 34	May 30	P. Vac.	June 28	Ditto
May 30 XXIII.	M 25	May 30	P. Vac.	June 20	Not known
May 31 XXIV.	M 4	May 31	P. Vac.	June 21	Afterwards proved to be Varicella
May 31 XXV.	M 34	May 31	P. Vac.	July 6	Green Man Inn
June 1 XXVI.	M 36	June 9	P. Vac.	June 28	He was met in Regent Street, and found to be suffering from Small-Pox, afterwards being sent to Bagnall
June 2 XXVII.	M 11	June 2	Un-Vac.	July 9	Close to Green Man
June 6 XXVIII.	F 36	June 6	P. Vac.	July 19	Ditto
June 8 XXIX.	M 39	June 8	P. Vac.	June 30	Ditto
June 9 XXX. XXXI. XXXII.	M 38 M 14 M 6	June 9 June 9 June 9	P. Vac. Un-Vac. Un-Vac.	June 30 July 9 Aug. 12	Contracts Case I.
June 9 XXXIII.	F 12	June 9	P. Vac.	June 30	Contact Case V.
June 10 XXXIV. XXXV. XXXVI.	F 46 F 4 F 11	June 10 June 10 June 10	P. Vac. Un-Vac. Un-Vac.	July 19 July 26 July 19	Contacts Case I.
June 11 XXXVII.	M 13 wks	June 11	Un-Vac.	Died June 16 at 11 a.m.	Case VII.

BASES OF SMALL-POX, ETC.—*continued.*

Beds and other Infected Articles destroyed and replaced.	No. of Contacts kept in quarantine or under observation for 17 days.	No. of Contacts vaccinated or re-vaccinated.	No. of Contacts who developed the Disease.	Others who had seen patient, who were vaccinated.
Jack couch bed. Premises thoroughly infected	3			
feather beds, two bolsters, four pillows. Premises thoroughly disinfected	3	2		
Jack bed, bolster, and two pillows. Premises thoroughly disinfected	Same as Case II.	Same as Case II.		
buttoned flock mattress, bolster, two bows. Premises thoroughly disinfected	1			
Jack bed, bolster, and two pillows. Premises thoroughly disinfected	9	9		
Father bed, bolster, two pillows. Premises thoroughly disinfected	9	3 others under 8		
Jack bed, bolster, and two pillows. Premises thoroughly disinfected	See Case IV.	...	See Case IV.	
Jack bed, bolster, and two pillows. Premises thoroughly disinfected	4	3		
See Case I.	See Case I.	See Case I.	See Case I.	
Jack bed, bolster, and two pillows. Premises thoroughly disinfected	See Case v.	See Case v.	See Case v.	
Father beds, two bolsters, and four bows. Premises thoroughly disinfected	See Case I.	See Case I.	See Case I.	
Jack bed, bolster, two pillows, and one high bed destroyed. Premises thoroughly disinfected.	7	6		

TABLE GIVING PARTICULARS IN REFEREN

Date of Notifica- tion and Number of Cases.	Age and Sex.	Date of Removal to Bagnall S. R.	Vaccin- ated or Un-Vac- cinated.	Date of Discharge or Death.	SOURCE OF INFECTION.	
June 17 XXXVIII	M 45	June 17	P. Vac.	July 9	A Tramp, not known.	Imported cas
June 18 XXXIX.	F 38	June 18	P. Vac.	July 13	Contacts of Cases V. and XXXIII.	
June 21 XL.	F 18	June 21	Un-Vac.	Aug. 2	Unknown	
June 22 XLI.	M 47	June 22	P. Vac.	July 13	Unknown.	Lives in infected area
June 23 XLII.	M 42	June 23	P. Vac.	July 13	Imported case	
July 6 XLIII.	M 26	July 6	P. Vac.	July 26	Recently came from Manchester. known	
July 13 XLIV.	M 56	July 13	P. Vac.	Aug. 2	Suspicious case, sent to Bagnall for ob- servation. Proved to be a rash brou- on by cold, &c. The man came f Waterhouses to Leek to see a docto	

## VACCINATION.

Through the courtesy of the Vaccination Officer, I am able to give figures relating to the last eight years' experience in this District.

	Births	Vacci- nated	Exemptions	Insus- ceptible	Re- moved	Dead	Post- poned
1897	434	266	98	1	17	52	0
1898	433	243	139	0	9	43	0
1899	377	262	49	0	10	50	6
1900	414	218	41	1	6	39	10
1901	406	216	51	0	2	41	18
1902	426	236	27	0	9	42	25
1903	420	213	46	1	8	30	19
1904	423	211	49	1	10	43	18

CASES OF SMALL-POX, ETC.—*continued.*

No. of Beds and other Infected Articles destroyed and replaced.	No. of Contacts kept in quarantine or under observation for 17 days.	No. of Contacts vaccinated or re-vaccinated.	No. of Contacts who developed the Disease.	Others who had seen patient, who were vaccinated.
In wards disinfected				
flock bed and pillows destroyed. Premises thoroughly disinfected	See Case v.	See Case v.	See Case v.	
feather bed, bolster, and two pillows. Premises thoroughly disinfected	2	2	...	8
flock bed, bolster, and two pillows. Premises thoroughly disinfected	6	5		
Lodging Houses thoroughly disinfected and the clothes of all the inmates				
flock bed, bolster, and two pillows. Premises thoroughly disinfected	5	5		

The figures in these columns apply only to those children registered during the year, a proportion of which still remain under the vaccination age.

We cannot ignore the fact that there is a gradually increasing opposition to vaccination, in spite of improved methods, vaccination performed at the home, and glycerinated lymph, and also in spite of the presence of small-pox in our midst during part of the year which resulted in three deaths, two in unvaccinated individuals and one probably unvaccinated, which experience alone certainly ought to lend weight to the argument for vaccination.

The number of exemptions is over eleven per cent. of the total number of births registered, which is much too high for the safety of the community.

As far as I am able to judge vaccination is efficiently performed. It is, however, a matter of regret that the

Act does not compel the private practitioner to vaccinate in four places, as the public vaccinator is obliged to do. It would also, in my opinion, improve the efficiency of vaccination if the Government supplied lymph to all practitioners, inspected the work done, and paid the fees.

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The following tables are compiled in the form required by the Local Government Board and the Staffordshire County Council :—

"TABLE I."—VITAL STATISTICS OF WILLOUGHBY DISTRICT DURING 1904 AND PREVIOUS YEARS.

YEAR.	Population estimated to middle of each Year.	Births.			Total Deaths Registered in the District.			Deaths of Non-residents registered in Public Institutions in the District.			Deaths of Non-residents registered in Public Institutions beyond the District.			Nett Deaths at all ages belonging to the District.	
		Under 1 Year of Age.		At all Ages.		Institutions in the District.		Institutions in the District.		Institutions in the District.		Institutions in the District.			
		Number.	Rate. *	Number.	Rate per 1,000 Births registered.	Number.	Rate per 1,000 Births registered.	Number.	Rate per 1,000 Births registered.	Number.	Rate per 1,000 Births registered.	Number.	Rate per 1,000 Births registered.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14		
1894	14593	429	29·4	71	160·2	250	17·1	30	11	...	239	16·3	...		
1895	14746	447	30·3	81	181·2	295	20·0	30	13	...	282	19·1	...		
1896	14920	408	27·3	47	115·1	257	17·2	24	9	...	248	16·8	...		
1897	15037	418	27·7	54	129·1	289	19·2	36	16	...	273	18·1	...		
1898	15174	437	28·7	59	135·0	267	17·5	32	9	...	258	17·0	...		
1899	15242	376	24·6	74	190·8	323	21·1	40	16	...	307	20·1	...		
1900	15386	414	26·9	59	142·5	280	18·2	40	20	...	260	16·9	...		
1901	15509	406	26·1	68	167·4	294	18·9	38	18	1	277	17·8	...		
1902	15562	422	26·9	70	165·8	298	19·0	36	14	2	286	18·2	...		
1903	15726	420	26·6	56	133·3	277	17·6	37	15	2	264	16·7	...		
Averages for years 1894-1903															
1904	15921	422	26·5	71	168·2	302	18·9	38	19	6	289	18·1	...		

NOTE.—The deaths to be included in Column 7 of this table are the whole of those registered during the year, as levied, according with the District or Division. The deaths to be included in Column 12 are the number in Column 7, corrected by the subtraction of the number in Column 11.

By the term "Non-residents" is meant persons brought into the district on account of sickness or infirmity, and dying in institutions, hospitals, workhouses, and lunatic asylums.

The term "Residents" is meant persons who have been taken out of the district on account of sickness or infirmity, and dying in institutions, hospitals, workhouses, and lunatic asylums.

"The Public Institutions" to be taken into account for the purposes of these Tables are those into which persons are lawfully received, or into which they are sent out of sick.

Area of District in acres (exclusive of area covered by water) 1160; total population at all ages 17,484; number of Persons per house, 4·58, at census 1901.

"The Public Institutions" in respect of the deaths, in which correction, have been made, are Leek Union Workshops, Leek Cottage Hospital, Basnall

“TABLE III.”

CASES OF INFECTIOUS DISEASE NOTIFIED DURING  
THE YEAR 1904.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						
	At all Ages.	Under 1.	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards.
Small-pox ... ...	44	1	2	5	6	30	...
Cholera ... ...	...	...	...	...	...	...	...
Diphtheria ... ..	22	...	2	16	...	4	...
Membranous croup ...	3	...	3	...	...	...	...
Erysipelas ... ...	5	...	...	...	2	3	...
Scarlet fever ...	39	...	6	31	...	2	...
Typhus fever ...	...	...	...	...	...	...	...
Enteric fever ...	10	...	...	4	3	3	...
Relapsing fever ...	...	...	...	...	...	...	...
Continued fever ...	...	...	...	...	...	...	...
Puerperal fever ...	...	...	...	...	...	...	...
Chicken Pox ... ...	...	...	...	...	...	...	...
Measles ... ...	118	1	36	70	7	4	...
 Totals ... ...	 241	 2	 49	 126	 18	 46	 ...

Number of cases removed from the Leek Urban District to the Leek Isolation Hospital :—Diphtheria, 12, Membranous Croup 1, Scarlet Fever 34, Enteric Fever 7, Measles 1. Total 55. To the Bagnall Small-pox Joint Hospital, 44 cases.

“TABLE IV.”

 CAUSES OF, AND AGES AT, DEATH DURING YEAR 1904,  
 IN THE LEEK URBAN DISTRICT.

CAUSES OF DEATH.	DEATHS IN OR BELONGING TO WHOLE DISTRICT AT SUBJOINED AGES.							Total Deaths in Public Institu- tions in the District.
	All ages.	Under 1 Year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and up- wards.	
Small-pox *	...	...	...	...	...	...	...	...
Measles	7	3	4	...	...	...	...	...
Scarlet fever	...	...	...	...	...	...	...	...
Whooping-cough	6	5	1	...	...	...	...	...
Diphtheria and mem- branous croup	...	1	...	1	...	...	...	1
Croup	...	...	...	...	...	...	...	...
Typhus	...	...	...	...	...	...	...	...
Fever	2	...	...	...	...	2	...	2
Enteric	...	...	...	...	...	...	...	...
Other continued	...	...	...	...	...	...	...	...
Epidemic influenza	2	...	...	...	...	2	...	1
Cholera	...	...	...	...	...	...	...	...
Plague	...	...	...	...	...	...	...	...
Diarrhoea	7	7	...	...	...	...	...	...
Enteritis	10	6	...	...	...	1	3	...
Puerperal fever	...	...	...	...	...	...	...	...
Erysipelas	...	...	...	...	...	...	...	...
Other septic diseases	...	...	...	...	...	...	...	...
Phthisis	35	...	...	2	9	24	...	2
Other tubercular diseases	3	1	2	...	...	...	...	2
Cancer, malignant disease	7	...	...	...	...	5	2	1
Bronchitis	18	5	1	1	1	3	7	1
Pneumonia	19	4	6	...	1	4	4	...
Pleurisy	...	...	...	...	...	...	...	...
Other diseases of Respiratory organs	5	1	2	1	...	...	1	...
Alcoholism	6	...	...	...	...	4	2	...
Cirrhosis of liver	...	...	...	...	...	...	...	...
Venereal diseases	1	1	...	...	...	...	...	...
Premature birth	9	9	...	...	...	...	...	...
Diseases and accidents of parturition	3	...	...	...	...	3	..	..
Heart diseases	35	1	...	...	3	17	14	4
Accidents	4	...	...	1	...	2	1	4
Suicides	...	...	...	...	...	...	...	...
All other causes	122	28	12	...	...	33	49	20
All causes ...	302	71	29	5	14	100	83	38

\* Three deaths from Small-pox which occurred at Bagnall Hospital are not included in this table.

During the year the usual inspections of the district have been made and monthly reports have been submitted to the Sanitary Committee, in which any questions specially affecting the health of the town have been referred to, and when necessary, suggestions submitted indicating the steps required to achieve a better condition of affairs.

The only special report made by me during the year was one relating to the small-pox epidemic.

J. MOUNTFORT JOHNSON, M.D.,

Medical Officer of Health.

#### FACTORY AND WORKSHOPS REPORT.

Sanitary Department,

Town Hall, Leek,

January 1st, 1905.

To His Majesty's

Secretary of State for the Home Department,

Whitehall, S.W.

Sir,

In pursuance of section 132 of the Factory and Workshops Act, 1901, I have the honour to report as follows:—

There are 142 workshops on the district register, chiefly comprising dress and mantle makers, tailors, cardboard box makers, and silk workers; in which workshops are employed 4 males under 14 years of age, 63 between 14 and

18, and 385 over the age of 18; 8 females under 14, 57 between 14 and 18, and 173 over 18, total males and females being 690. During the year all these premises have been inspected and re-inspections made from time to time as occasion required. Only in two instances was it necessary to complain; one case being the want of proper ventilation, and the other being want of proper water closet accommodation for each sex, no case of overcrowding was detected, the general sanitary condition of the same was satisfactory, and the other requirements of the Act were being generally observed.

There are also 21 bakehouses on the register within the district, all of which have been inspected twice during the year, and otherwise as occasion required. The number of persons employed therein consists of 9 males between 14 and 16 years of age, 46 males over 16 years of age, 1 female between 14 and 16 years of age, and 2 females over 16 years of age. Three bakehouses have been closed during the year, and another is required to make certain alterations before a Certificate of suitability can be given.

During the year 36 cases of outworkers have been reported, viz: 20 in February and 16 in August. No complaint has arisen of any contravention of the provisions of the Act relating thereto.

J. MOUNTFORT JOHNSON, M.D.,  
Medical Officer of Health.

## SANITARY INSPECTOR'S REPORT.

## ACTION TAKEN FOR THE ABATEMENT OF NUISANCES, &amp;c.

During the year ending December, 1904, the following cases of Nuisance and other matters complained of were dealt with, comprising:—

	CASES.
Defective or want of private drainage ...	61
Passing liquid above 110° Fah. into sewer ...	1
Passing chemical refuse into sewer ...	1
Slop-stone drains admitting sewer gas into a house disconnected ...	5
Defective water closets ..	41
Offensive privies ...	88
Offensive ashpits ...	79
Accumulation of offensive matter ...	10
Offensive privy cesspools filled up ...	48
Want of drain ventilation ...	3
Dilapidated buildings ...	16
Houses in a filthy condition ...	4
Nuisances arising from overcrowding ...	7
Defective water spouting ...	3
Want of proper water supply ...	0
Swine kept within 60 feet of dwelling house ...	0
Want of proper bedroom ventilation ...	183
Slaughter-house nuisance ...	3
Water course polluted by sewage ..	2
Workshop want lime washing ...	0
Want of proper chimney to stove ...	1
Offensive pig-sty... ...	1
Dangerous disused well to be filled up ...	1
Want of proper waste-pipe to lavatory ...	0

## CASES.

Want of proper receptable for stable manure	...	0
Poultry kept in dwelling houses contrary to Bye-Laws	...	0
Samples of Petroleum taken and tested	... ..	2
Persons in dirty condition	... ..	1
Escape of coal gas from gas mains	...	3
Want of w.c. accommodation in Factories	...	6
Keeping an unregistered Lodging House	... ..	1
Want of proper urinal on licensed premises	...	2
Offensive swill tubs	... ..	3
Nuisance from fish frying	...	0
Nuisance from offal boiling	... ..	0
Want of proper paving in private yards attached to dwelling houses	... .. ..	11
Want of proper Privy or Water Closet accommodation	...	120
Want of proper movable receptables for ashes	...	139
Nuisance arising from dense black smoke	...	2
Number of houses disinfected	... ..	132
Number of Schools disinfected	... ..	6
Number of infected articles, bedding, &c., disinfected or destroyed	... .. .. ..	1908
Number of houses unfit for human habitation closed	...	2
Number of closed houses made fit for habitation	...	0
Number of cases of parental neglect of children	...	1
Exposing infected clothing	... ..	1

A considerable number of nuisances were promptly abated on their being intimated to the persons responsible.

There are several unexpired notices of nuisances remaining on the books not yet complied with.

## PROCEEDINGS.

Proceedings were taken in one case for keeping an unregistered common Lodging-house, and a fine of 10/- and costs inflicted.

Proceedings were also taken in one case for exposing infected clothes in public street and a fine of 5/- and costs inflicted.

#### OFFENSIVE PRIVIES AND CESSPOOLS.

	CASES.
Offensive privies demolished or converted into water closets ... ... ... ... ...	48
Offensive ashpits abolished, and portable receptacles provided in lieu thereof . . . . .	54

#### REMOVAL OF ASHES AND NIGHT-SOIL.

The Scavenging Department removed 5062 loads of house ashes and garbage, compared with 4940 during the preceding year, and 247 loads of night-soil, compared with 264 the preceding year. I again beg to call attention to the absolute necessity of suitable provision being made for the disposal of house refuse in the future. As all tips are highly objectionable, the question arises as to whether arrangements should not be made to provide a destructor. All accumulations of house refuse contain more or less infectious matter dangerous to health, and ought to be destroyed. The frequent removal of refuse from premises demands as much care as the acquisition of food and other things necessary to sustain life; and however costly it may prove, its removal and destruction is a necessary part of the economy of every family and of every community.

#### COMMON LODGING-HOUSES.

There are 4 houses registered under the Common Lodging-houses Acts, for the reception of 111 casual lodgers. The regulations approved by the Local Govern-

ment Board for their management are being satisfactorily observed.

#### SLAUGHTER-HOUSES.

There are 6 licensed Slaughter-houses within the Town, subject to the Bye-Laws approved by the Local Government Board.

#### WORKSHOPS.

There are 143 workshops on the Register, all of which have been inspected from time to time as occasion required, and with two exceptions I have not had to complain of any contravention of the provisions of the Act. The number of persons employed in December were as follows:—

Sex.	AGES.			Total.
	12 and under 14.	14 and under 18.	18 and upwards.	
Males	4	63	385	452
Females	8	57	173	258
Persons	12	120	558	690

#### BAKEHOUSES.

There are 21 bakehouses within the district, all of which were inspected half-yearly, and at other times as occasion required. The number of Persons employed being 9 males between 14 and 16 years of age, 46 over 16 years of age, 1 female between 14 and 16 years of age, and 2 over 16 years.

#### PETROLEUM STORES.

There are two licenses in force for the keeping and sale of Petroleum that flash under 73 degrees

Fahrenheit's thermometer; and one for the keeping and sale of Calcium Carbide.

#### GAS SUPPLY.

The purity of the Gas supplied to the Town was tested from time to time in the manner required by the 34th and 35th Vic., cap. 41. No impurity arising from the presence of sulphuretted hydrogen (which is deemed a nuisance injurious to health,) was shown by the tests made at the Town Hall during the year.

#### NOTIFICATION OF INFECTIOUS DISEASE.

During the year ending 1904, 241 cases of infectious diseases, consisting of 44 cases of small-pox, 39 cases of scarlet fever, 22 of diphtheria, 10 of enteric fever, 5 of erysipelas, 3 of croup, and 118 of measles, were notified during the year, and the necessary steps taken to prevent the spread of the disease. 55 of these cases were removed to the Leek Isolation Hospital, 44 to the Bagnall Small-Pox Hospital, and the remainder treated at their own homes. Notwithstanding the efforts of the department it has been found exceedingly difficult in many cases to secure satisfactory isolation of cases of infectious disease at home. Thoughtless persons attending upon the patient mixing with others without taking proper precautions, and receiving visitors into the infected house, have been the means of spreading the infection to a large extent. In other instances, especially scarlet fever cases have been of so mild a character that it was not thought necessary to call in the doctor, and the case has gone unrecognised, the children being allowed to mix with others and spread the infection. The source of milk supply

is recorded in every case of infectious disease notified, and we have no evidence of any mischief resulting from its distribution.

#### ISOLATION HOSPITAL.

Year ending December, 1904.

Number of patients in Hospital, Jan. 1st, 1904	...	6
Do. do. admitted during the year	...	55
Do. do. discharged do.	...	48
Do. do. died do.	...	3
Do. do. in Hospital, Dec. 31st, 1904	...	10

The average duration in Hospital of each patient discharged or died was 48·1 days.

The average duration in Bagnall Small-pox Hospital of each of the 44 patients sent from Leek was 27·1 days.

#### INTERMENTS WITHIN THE TOWN.

During the year ending December, 1904, 5 interments took place in the Burial Ground attached to St. Edward's Church, and 5 in the Ground attached to Mount Pleasant Wesleyan Chapel. The provisions of the Orders in Council relating thereto were duly observed.

TABLE I.—ABSTRACT OF THE CENSUS RETURNS OF 1851, 1861, 1871, 1881, 1891, AND 1901, WITHIN THE LIMITS OF THE LEEK IMPROVEMENT ACT.

Census Year	Average Statute Acres.	HOUSES.			PERSONS.			Average number of Persons per house.
		Inhabited	Uninhabited	Building	Males	Females	TOTAL	
1851	1·60	17·1	39	22	4315	3781	9096	5·06
1861	1400	2228	101	27	4686	5488	10174	4·59
1871	1400	2386	88	2	5087	6244	11331	4·74
1881	1400	2729	130	18	5874	6091	12005	4·71
1891	1400	3022	109	24	6420	7707	14128	4·97
1901	1400	3380	150	78	6917	8507	15484	4·58

TABLE 2.—POPULATION, BIRTHS AND DEATHS.

Table showing the mean Population, the number of Births and Deaths, and the average annual number of Births and Deaths to 1,000 persons living, and the mean Age at Death of males, females and persons within the limits of the Leek Improvement Act, during various periods of the 54 years ending 1904.—(W. H. H.)

Periods.	Mean Population.	Average Annual Number of Births and Deaths to 1,000 living.				Mean Age at Death.			
		Births	Deaths	Births	Deaths	Males	Females	Years,	Years,
10 years 1851-60	9635	3440	2819	35·7	29·3	23·5	25·9	24·8	
10 years 1861-70	10752	3516	2540	32·7	23·6	29·1	34·7	32·0	
10 years 1871-80	12098	4167	2734	34·4	22·6	30·8	32·3	31·5	
10 years 1881-90	13496	4146	2668	30·1	19·8	32·7	35·9	34·3	
10 years 1891-00	14803	4177	2832	28·2	19·1	36·1	38·4	37·2	
Year 1901	15509	406	294	26·1	18·9	34·9	42·6	38·8	
Year 1902	15663	422	298	26·9	19·0	32·9	38·3	35·4	
Year 1903	15726	420	279	26·6	17·6	36·2	43·2	39·8	
Year 1904	15921	422	303	26·5	18·9*	38·4	36·3	37·5	

\* Adding 6 persons who died in public institutions outside the district, and deducting 19 deaths of persons belonging to other districts who died in public institutions in Leek, the actual death rate to 1000 living is 18·1 instead of 18·9.

Excluding the 19 Deaths in Public Institutions in the Town of persons brought there from other Districts, and including the 6 Deaths in Public Institutions outside the District of persons who were residents of Leek, the corrected annual rate of mortality in the Urban District of Leek for the year ending December, 1904, is 18·1 to 1,000 living.

It will be seen by the foregoing No. 2 Abstract Table that during the last 44 years, the rate of mortality compared with that of the ten years 1851-60 has been reduced 30 per cent., which is equivalent to a reduction of 30 per cent. in the rate of sickness; and the duration of life has increased 30 per cent. Gradually the fact is being more fully recognised that in proportion as health is protected, and the duration of life is enhanced, the wealth of the community is increased.

TABLE 3.—INFANT MORTALITY.

Table shewing the number of Births; the number of Deaths under one year; and the rate of mortality to 1,000 births, within the limits of the Leek Improvement Act, during various periods of the 54 years ending 1904.

Periods.	Number of		Rate of Mortality to 1000 Births.
	Births.	Deaths under 1 year.	
10 years 1851-60	3490	646	187·8
10 years 1861-70	3517	573	162·9
10 years 1871-80	4107	670	160·7
10 years 1881-90	4110	585	141·1
10 years 1891-00	4177	69	141·4
Year 1901	409	68	167·4
Year 1902	422	70	165·8
Year 1903	420	56	133·4
Year 1904	422	71	168·2

The deaths of infants under the age of one year remains the blackest spot in the vital statistics of the town.

There is no doubt but that the objectionable system of the employment of mothers of infants from their homes is, to a large extent, responsible for the loss of infant life. Experience shows that infant mortality tends to rise when the staple trade is good, and falls when it is bad. It rarely happens that a death under the age of one year is recorded amongst the middle and upper classes.

TABLE 4.

Percentage of Illegitimate Births in Leek during each of the under-mentioned periods, of the 54 years ending 1904.

Periods of Years.	Percentage of Illegitimate Births.
10 years 1851-60	9.7
10 years 1861-70	8.8
10 years 1871-80	8.5
10 years 1881-90	6.8
10 years 1891-00	5.6
Year 1901	5.6
Year 1902	7.5
Year 1903	6.6
Year 1904	6.6

#### HOUSING OF THE WORKING CLASSES' ACT.

During the year 1904 it has not been necessary to resort to the provisions of this Act for closing orders. Two houses unfit for habitation were closed.

### CANAL BOATS ACTS, 1877 AND 1884.

During the year ending December 1904, 45 Canal Boats were inspected within the Urban Sanitary District of Leek. The condition of the Boats and their occupants as regards the several matters dealt with in the Acts and regulations was (with one exception) satisfactory.

### DAIRIES, COW-SHEDS AND MILK-SHOPS ORDER, 1885.

There are 46 persons registered under the above order. 14 are Milk-shops, and the remainder dairies and cow-sheds. There are 186 Milch cows kept. All the said premises were inspected twice during the year, and suggestions made in several cases, with a view to improve the drainage and ventilation of the buildings used as cow-sheds.

Between the 28th of May and the 6th of July 44 cases of Small-pox were notified, and immediately removed to Bagnall Hospital, and the necessary action promptly taken to prevent the spread of the disease. The 14 houses invaded by the disease, with one exception may be said to have been in a fairly good sanitary condition. No case was notified in connection with what may be called slum property.

As a result of the house to house inspection of ordinary cottage property situate in the following streets, viz :—Ball Have Green, Nelson Street, Milk Street, Prince Street, Pump Street, Mill Street, Kiln Lane, Belle Vue, Angle Street, Part of West Street, Garden Street, London Street, Duke Street, Church Lane, Ball Lane and courts adjoining, Livingstone Street, Talbot Street, Cromwell Terrace and Ashbourne Road, notices were served to

abate various nuisances connected with 437 houses, chiefly consisting of offensive privies, cesspools, ash-pits, drainage, and the want of proper bedroom ventilation. Of these notices 292 have been satisfactorily complied with and written off the books; and the remaining 145 will be proceeded with as soon as weather permits. The notices complied with include 48 offensive privies, converted into water-closets, the cesspools filled up, and 54 offensive ash-pits abolished, and 197 bedroom windows made to open for the purpose of ventilation, and reports thereon furnished to the Committee and submitted to the Council.

R. FARROW,

Sanitary Inspector.

